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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/487,004 | 01/19/2000 | TSUTOMU YAMADA | | 2602 |

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| EXAMINER |
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ABRAHAM, FETSUM

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| ART UNIT | PAPER NUMBER |
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2826

DATE MAILED: 03/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/487,004

Applicant(s)

YAMADA, TSUTOMU

Examiner

Fetsum Abraham

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 15.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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As for claim 4, there are two types of TFTs known in the art: top gate and bottom-gate. Therefore, at least one of the types is used in the prior art.

As for claims 5,6, all display devices are arranged in matrices on a substrate and the row/column arrangement in the claims is generic to all display matrices.

As for claims 7,8, since storage capacitors are attached to the source/drain of the pixel switches, it is clear that the active element of the switch commonly serves as one of the capacitive electrodes. Besides organic and non-organic materials are commonly used in the art of TFTs.

As for the circuit connection including the storage capacitance in claims 9,10, all display matrices are connected similar to the claimed interconnection.

Any inquiry concerning this communication should be directed to Fetsum Abraham at telephone number (703) 305,3793, or by E-mail at fetsum.abraham@uspto.gov.

Any inquiry of a general nature or relating to the status of this application should be directed to the *SPE of AU:2826* at (703)308-6601, or the *Group receptionist* at (703) 308-0956.



Fetsum Abraham

3/4/03

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Claims rejection

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yamazaki et al (6,274,887)**.

As for claims 1,2,3,9,10,11, the patent discloses a first pixel TFT which is the switching element of the structure that acquires data signal in response to selection gate signal and a CMOS driving circuit to drive the pixel (see column 24, 60-65). In the paragraph, the pixel TFT (the first TFT) is a double gated NMOS element while the driving CMOS has N-type and P-type transistors. As well known in the art, the second element (CMOS driver) is located between the optical device and the matrix driver. Figure 1 also shows that the NMOS switch is an LDD based TFT. Figure 15c shows the applicability of the driving and switching TFTs in optical display matrix between anode and cathode electrodes where light emission from the pixel is the norm of such structures. Although the prior art omits to specify the material type of the transistors, single crystal based TFTs are one of the most common elements used in the art. Therefore, it would have been obvious to one skilled in the art to use such TFTs in display devices, since the current generation behavior of such devices is fairly constant because of the crystal uniformity of the substrate they are formed on.

As for the material types in claims 2,3, polysilicon, single crystal silicon, and amorphous silicon are exchangeable materials for TFT active layers.